

Abstract

Improved sucker rod joints for down hole petroleum pumping applications are provided within the form factor of standard API sucker rods, such that existing inventory in suitable condition is fully usable in more demanding applications. The pin ends are selected or processed such as to provide preselected axial distance between a flat pin end and at least one reference surface, such as a threaded region or reference shoulder or both. The coupler is dimensioned such that the pin ends are in abutment either with each other or with opposite sides of an intervening torque washer in the central region, when the connection is made to a selected level of thread engagement. Furthermore, the engagement is such as to put the pin ends in compression and the coextensive length of coupler in tension. This increases frictional restraints and locks the elements together to resist fatigue failure upon cycling and to insure together with an anaerobic adhesive sealant, against back threading. This arrangement enables standard quality sucker rods to be employed in a configuration which is mechanically secure and highly resistant to tensile, bending and torsional forces, thus assuring a greater strength at the joint than in the rod itself, and resisting the effects of material fatigue arising from long term and stressful cycling operations.